What is claimed is:

1. An arrayed waveguide grating (AWG) device comprising:

first and second slab couplers;

a plurality of array waveguides optically coupled between the first and second slab couplers and having predetermined optical path length differences therebetween; and

a plurality of output waveguides optically coupled at first ends thereof to an output side of the second slab coupler, for outputting different wavelength channel outputs therefrom; wherein

the output waveguides are multi-mode waveguides;

at least one of the output waveguides, along at least a portion of its length, is of different width to at least one adjacent one of the output waveguides along an adjacent portion of the length thereof; and

all the output waveguides are of substantially equal width at said first ends thereof where they are optically coupled to the second slab coupler.

2. An AWG according to claim 1, wherein said at least one output waveguide is tapered in width along an initial portion thereof, from said first end thereof.

3. An AWG device according to claim 2, wherein the or each said tapered waveguide is adiabatically tapered.

4. An AWG device according to claim 2, wherein the or each said tapered output waveguide narrows in width from its first end, along an initial portion of its length.

5. An AWG according to claim 1, wherein a plurality of the output waveguides, interspersed with the remaining ones of the output waveguides, are of different width to said remaining ones of the output waveguides, along at least a portion of their lengths.

6. An AWG according to claim 5, wherein every Nth one of the output waveguides is of equal width along said different width portion of its length, where N is an integer greater than 1.

7. An AWG according to claim 5, wherein adjacent ones of the output waveguides are of different widths along corresponding portions of their lengths.

8. An AWG according to claim 7, wherein the output waveguides fan-out from the second slab coupler, in a fan-out region of the device, and adjacent ones of the output waveguides are of different widths along a portion of the fan-out region proximal to the second slab coupler.

9. An AWG according to claim 1, wherein each input/output waveguide is a double-mode waveguide.

10. An AWG according to claim 4, wherein the or each said tapered output waveguide is also tapered in width so as to widen along second portions thereof towards second ends of the output waveguides.

11. An AWG according to claim 10, wherein all the output waveguides are of substantially equal width at the second ends thereof.

12. An AWG according to claim 1, wherein some of the output waveguides are of substantially uniform width along their entire lengths.

13. An AWG according to claim 1, wherein some of the output waveguides are tapered in width at first ends thereof while being of substantially uniform width along their remaining length.

14. An AWG according to claim 1, wherein the width of the output waveguides at their first ends is substantially equal to the width of the output waveguides at output ends thereof.

15. An AWG according to claim 1, further including a plurality of input waveguides optically coupled at first ends thereof to an input side of the first slab coupler, wherein at least one of the input waveguides is of different width, along at least a portion of the length thereof, to at least one adjacent one of the input waveguides along an adjacent portion thereof, and wherein all the input waveguides are of substantially equal width at said first ends thereof where they are coupled to the first slab coupler.

16. An AWG according to claim 15, wherein said at least one input waveguide having said different width is tapered from said first end thereof along at least an initial portion thereof.

17. An array waveguide grating (AWG) device according to claim 1, wherein the first and second slab couplers are arranged so that a longitudinal axis of the second slab coupler is substantially perpendicular to a longitudinal axis of the first slab coupler, said input/output waveguides are arranged to receive zero order output signals imaged at an output face of the second slab coupler, and the AWG device further includes additional waveguides optically coupled to the second slab coupler for conveying higher order signals comprising at least some first order output signals, away from the second slab coupler.

18. An AWG according to claim 17, wherein the input/output waveguides are arranged so as to bend away from an area into which non-zero order output signals imaged by the second slab coupler, comprising at least some first order output signals, diverge from the second slab coupler.

19. A power monitor comprising:
an arrayed waveguide grating (AWG) according to claim 1, and

detector means for detecting the different wavelength channel outputs at output ends of the output waveguides.

20. A power monitor according to claim 19, wherein at least one detector is provided for each wavelength channel output.

21. A communications system incorporating at least one AWG device according to claim 1.

22. A communications system incorporating at least one power monitor according to claim 19.

23. An AWG according to claim 1,wherein all the output waveguides are of equal width at said first ends thereof where they are coupled to the second slab coupler.

24. An arrayed waveguide grating (AWG) device comprising:
first and second slab couplers;
a plurality of array waveguides optically coupled between the first and second slab couplers and having predetermined optical path length differences therebetween; and
a plurality of output waveguides optically coupled at first ends thereof to an output side of the second slab coupler, for outputting different wavelength channel outputs therefrom; wherein
the output waveguides are multi-mode waveguides;
at least one of the output waveguides, along at least a portion of its length, is of different width to at least one adjacent one of the output waveguides along an adjacent portion of the length thereof;
said at least one of the output waveguides is tapered in width along an initial portion thereof, from said first end thereof; and
the widths of the output waveguides where they are optically coupled to the second slab coupler are designed so as to achieve a substantially uniform passband over all the output wavelength channels of the device.